AMENDMENTS TO THE CLAIMS

Please amend the claims of this application as follows:

Claim 1. (Cancelled).

2. (Currently amended) A method of driving a bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, the method comprising:

storing a look-up table containing data representing the impulses necessary to convert an initial gray level to a final gray level;

storing data representing at least an initial state of each pixel of the display;

~~according to claim 1 further comprising~~ storing data representing at least one prior state of each pixel prior to said initial state thereof,

receiving an input signal representing a desired final state of at least one pixel of the display; and

generating an output signal representing the impulse necessary to convert the initial state of said one pixel to the desired final state thereof, as determined from said look-up table, ~~and~~ wherein said output signal is generated dependent upon both said at least one prior state and said initial state of said one pixel.

3. (Currently amended) A method according to claim 2 wherein data is stored representing at least two prior states of each pixel and said output signal is generated dependent upon said at least two prior states and said initial state of said one pixel.

4. (Currently amended) A method according to claim [[1]]2 further comprising receiving a temperature signal representing the temperature of at least one pixel of the display and generating said output signal dependent upon said temperature signal.

5. (Original) A method according to claim 4 wherein said look-up table stores multiple values for each transition from an initial gray level to a final gray level,

said multiple values representing the values required for a specific transition at a specific temperature.

6. (Original) A method according to claim 5 further comprising interpolating between adjacent values for a transition when the temperature signal indicates a temperature intermediate the temperatures to which said adjacent values relate.

7. (Original) A method according to claim 4 wherein said look-up table stores functions of temperature, and wherein said output signal is generated by calculating the value of the relevant function at the temperature indicated by said temperature signal.

8. (Currently amended) A method of driving a bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, the method comprising:

storing a look-up table containing data representing the impulses necessary to convert an initial gray level to a final gray level;

storing data representing at least an initial state of each pixel of the display;

receiving an input signal representing a desired final state of at least one pixel of the display;

~~according to claim 1 further comprising~~ generating a lifetime signal representing the operating time of said one pixel; and

generating an output signal representing the impulse necessary to convert the initial state of said one pixel to the desired final state thereof, as determined from said look-up table, ~~generating~~ said output signal being generated dependent upon said lifetime signal.

9. (Currently amended) A method of driving a bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, the method comprising:

storing a look-up table containing data representing the impulses necessary to convert an initial gray level to a final gray level;

storing data representing at least an initial state of each pixel of the display;

receiving an input signal representing a desired final state of at least one pixel of the display;

~~according to claim 1 further comprising~~ generating a residence time signal representing the time since said one pixel underwent a transition; and

generating an output signal representing the impulse necessary to convert the initial state of said one pixel to the desired final state thereof, as determined from said look-up table, ~~generating~~ said output signal being generated dependent upon said residence time signal.

10. (Currently amended) A method according to claim [[1]]2 wherein said output signal represents the period of time for which a substantially constant drive voltage is to be applied to said pixel.

11. (Currently amended) A method according to claim 10 wherein said pixel is driven in a scan comprising a plurality of sub-scan periods and said output signal ~~represents~~ determines during which of said sub-scan periods a drive voltage is to be applied to said pixel.

12. (Currently amended) A method according to claim [[1]]2 wherein said output signal comprises at least one polarity bit representing the polarity of the impulse necessary to convert the initial state of said one pixel to the desired final state thereof.

Claims 13 and 14. (Cancelled).

15. (Currently amended) A device controller for controlling a bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, said controller comprising:

storage means arranged to store both a look-up table containing data representing the impulses necessary to convert an initial gray level to a final gray level, and data representing at least an initial state of each pixel of the display, ~~according to claim 14 wherein~~ said storage means ~~is~~ also being arranged to store data representing a least one prior state of each pixel prior to said initial state thereof[[,]];

input means for receiving an input signal representing a desired final state of at least one pixel of the display;

calculation means for determining, from the input signal, the stored data representing the initial and prior states of said pixel, and the look-up table, the impulse required to change the initial state of said one pixel to the desired final state~~and said calculation means is arranged to determine said impulse dependent upon said input signal, said initial state of said pixel and said prior state of said pixel~~; and

output means for generating an output signal representative of said impulse.

16. (Original) A controller according to claim 15 wherein said storage means is arranged to store data representing at least two prior states of each pixel, and said calculation means is arranged to determine said impulse dependent upon said input signal, said initial state of said pixel and said at least two prior states of said pixel.

17. (Currently amended) A device controller ~~according to claim 14~~ for controlling a bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, said controller comprising:

storage means arranged to store both a look-up table containing data representing the impulses necessary to convert an initial gray level to a final gray level, and data representing at least an initial state of each pixel of the display,

input means for receiving an input signal representing a desired final state of at least one pixel of the display, said input means[[is]] also being arranged to receive a temperature signal representing the temperature of at least one pixel of the display[[, and]];

calculation means for determining, from the input signal, the stored data representing the initial state of said pixel, said temperature signal, and the look-up table, the impulse required to change the initial state of said one pixel to the desired final state~~and said calculation means is arranged to determine said impulse dependent upon said input signal, said initial state of said pixel and said temperature signal~~; and

output means for generating an output signal representative of said impulse.

18. (Original) A controller according to claim 17 wherein said storage means is arranged to store multiple values for the impulses necessary to convert an initial gray level to a final gray level, said multiple values representing the values required for a specific transition at a specific temperature.

19. (Original) A controller according to claim 18 wherein said calculation means is arranged to interpolate between adjacent ones of said stored multiple values when said temperature signal indicates a temperature intermediate the temperatures to which said adjacent stored values relate.

20. (Original) A controller according to claim 17 wherein said storage means is arranged to store functions of temperature, and said calculation means is arranged to determine said impulse by calculating the value of the relevant function at the temperature represented by said temperature signal.

21. (Currently amended) A device controller ~~according to claim 14 further comprising~~ for controlling a bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, said controller comprising:

storage means arranged to store both a look-up table containing data representing the impulses necessary to convert an initial gray level to a final gray level, and data representing at least an initial state of each pixel of the display,

input means for receiving an input signal representing a desired final state of at least one pixel of the display;

lifetime signal generation means arranged to generate a lifetime signal representing the operating time of said pixel~~, said calculation means determining said impulse from said input signal, said stored data representing the initial state of said pixel and said lifetime signal~~

calculation means for determining, from the input signal, the stored data representing the initial state of said pixel, said lifetime signal, and the look-up table, the impulse required to change the initial state of said one pixel to the desired final state; and

output means for generating an output signal representative of said impulse.

22. (Currently amended) A device controller ~~according to claim 14 further comprising~~ for controlling a bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, said controller comprising:

storage means arranged to store both a look-up table containing data representing the impulses necessary to convert an initial gray level to a final gray level, and data representing at least an initial state of each pixel of the display,

input means for receiving an input signal representing a desired final state of one pixel of the display;

residence time signal generation means for determining the residence time since said one pixel last underwent a transition and for generating a residence time signal representing said residence time;~~, said calculation means determining said impulse from said input signal, said stored data representing the initial state of said pixel and said residence time signal~~

calculation means for determining, from the input signal, the stored data representing the initial state of said pixel, said residence time signal, and the look-up table, the impulse required to change the initial state of said one pixel to the desired final state; and

output means for generating an output signal representative of said impulse.

23. (Currently amended) A controller according to claim [[14]]15 wherein said output means generates a signal representing the time for which a substantially constant drive voltage is to be applied to said pixel.

24. (Currently amended) A controller according to claim [[14]]15 wherein said output signal comprises at least one polarity bit representing the polarity of said impulse.

Claims 25 and 26 (Cancelled).

27. (Original) A device controller comprising:

storage means arranged to store both a look-up table containing data representing the impulses necessary to convert an initial gray level to a final gray level, and data representing at least an initial state of each pixel of the display;

input means for receiving an input signal representing a desired final state of at least one pixel of the display;

calculation means for determining, from the input signal, the stored data representing the initial state of said pixel, and the look-up table, the impulse required to change the initial state of said one pixel to the desired final state; and

output means for generating an output signal representative of said impulse, the output signal representing a plurality of pulses varying in at least one of voltage and duration, the output signal representing a zero voltage after the expiration of a predetermined period of time.

Claim 28. (Cancelled).

29. (Original) A driver circuit comprising:

output lines arranged to be connected to drive electrodes of an electro-optic display;

first input means for receiving a plurality of 2-bit numbers representing the voltage and polarity of signals to be placed on the drive electrodes; and

second input means for receiving a clock signal,

the driver circuit being arranged such that, upon receipt of the clock signal, the driver circuit displays voltages selected from R + V, R and R - V on its output lines, where R is a reference voltage and V is the maximum difference from the reference voltage which the driver circuit can assert.

30. (Original) A method for driving an electro-optic display having a remnant voltage, the method comprising:

(a) applying a first driving pulse to a pixel of the display;

(b) measuring the remnant voltage of the pixel after the first driving pulse; and

(c) applying a second driving pulse to the pixel following the measurement of the remnant voltage, the magnitude of the second driving pulse being controlled dependent upon the measured remnant voltage to reduce the remnant voltage of the pixel.

31. (New) A method according to claim 30 wherein the display is of the direct drive type having a plurality of pixels each of which is provided with a separate electrode, the display further comprising switching means arranged to control independently the voltage applied to each electrode.

32. (New) A method according to claim 30 wherein the display comprises a plurality of pixels and there is applied to the display at intervals a blanking pulse which drives all the pixels of the display to substantially the same display state, and measurement of the remnant voltage is effected after such a blanking pulse.

33. (New) A method according to claim 30 wherein the display is an electrophoretic display.

34. (New) A method according to claim 33 wherein the display is an encapsulated electrophoretic display.

35. (New) A method according to claim 30 wherein the display is a microcell display comprising charged particles and a suspending fluid retained within a plurality of cavities formed in a carrier medium.

36. (New) A method according to claim 30 wherein the display is a passive matrix display.

37. (New) A method according to claim 2 wherein there is applied to said one pixel in succession a pre-pulse which drives said one pixel to one of its extreme optical states, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

38. (New) A method according to claim 2 wherein there is applied to said one pixel in succession a first pre-pulse which drives said one pixel to one of its extreme optical states, a second pre-pulse which drives said one pixel from said one extreme optical state to the opposed extreme optical state, and an addressing pulse which drives said one pixel from said opposed extreme optical state to the desired final state.

39. (New) A method according to claim 37 wherein the pixels of the display are divided into first and second groups and different pre-pulses are applied to the first and second groups so that the pre-pulse drives the first group of pixels to one extreme optical state and the second group of pixels to the opposed extreme optical state.

40. (New) A method according to claim 2 wherein the display is an electrophoretic display.

41. (New) A method according to claim 40 wherein the display is an encapsulated electrophoretic display.

42. (New) A method according to claim 2 wherein the display is a microcell display comprising charged particles and a suspending fluid retained within a plurality of cavities formed in a carrier medium.

43. (New) A method according to claim 2 wherein the display is a passive matrix display.

44. (New) A method according to claim 8 wherein there is applied to said one pixel in succession a pre-pulse which drives said one pixel to one of its extreme optical states, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

45. (New) A method according to claim 8 wherein there is applied to said one pixel in succession a first pre-pulse which drives said one pixel to one of its extreme optical states, a second pre-pulse which drives said one pixel from said one extreme optical state to the opposed extreme optical state, and an addressing pulse which drives said one pixel from said opposed extreme optical state to the desired final state.

46. (New) A method according to claim 44 wherein the pixels of the display are divided into first and second groups and different pre-pulses are applied to the first and second groups so that the pre-pulse drives the first group of pixels to one extreme optical state and the second group of pixels to the opposed extreme optical state.

47. (New) A method according to claim 8 wherein the display is an electrophoretic display.

48. (New) A method according to claim 47 wherein the display is an encapsulated electrophoretic display.

49. (New) A method according to claim 8 wherein the display is a microcell display comprising charged particles and a suspending fluid retained within a plurality of cavities formed in a carrier medium.

50. (New) A method according to claim 8 wherein the display is a passive matrix display.

51. (New) A method according to claim 9 wherein there is applied to said one pixel in succession a pre-pulse which drives said one pixel to one of its extreme optical states, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

52. (New) A method according to claim 9 wherein there is applied to said one pixel in succession a first pre-pulse which drives said one pixel to one of its extreme

optical states, a second pre-pulse which drives said one pixel from said one extreme optical state to the opposed extreme optical state, and an addressing pulse which drives said one pixel from said opposed extreme optical state to the desired final state.

53. (New) A method according to claim 51 wherein the pixels of the display are divided into first and second groups and different pre-pulses are applied to the first and second groups so that the pre-pulse drives the first group of pixels to one extreme optical state and the second group of pixels to the opposed extreme optical state.

54. (New) A method according to claim 9 wherein the display is an electrophoretic display.

55. (New) A method according to claim 54 wherein the display is an encapsulated electrophoretic display.

56. (New) A method according to claim 9 wherein the display is a microcell display comprising charged particles and a suspending fluid retained within a plurality of cavities formed in a carrier medium.

57. (New) A method according to claim 9 wherein the display is a passive matrix display.

58. (New) A controller according to claim 15 wherein said output means is arranged to generate in succession a pre-pulse which drives one pixel of its associated display to one of its extreme optical states, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

59. (New) A controller according to claim 15 wherein said output means is arranged to generate in succession a pre-pulse which drives one pixel of its associated display to one of its extreme optical states, a second pre-pulse which drives said one pixel from said one extreme optical state to the opposed extreme optical state, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

60. (New) A bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, and a controller according to claim 15 arranged to control the electro-optic display.

61. (New) A controller according to claim 17 wherein said output means is arranged to generate in succession a pre-pulse which drives one pixel of its associated display to one of its extreme optical states, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

62. (New) A controller according to claim 17 wherein said output means is arranged to generate in succession a pre-pulse which drives one pixel of its associated display to one of its extreme optical states, a second pre-pulse which drives said one pixel from said one extreme optical state to the opposed extreme optical state, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

63. (New) A bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, and a controller according to claim 17 arranged to control the electro-optic display.

64. (New) A controller according to claim 21 wherein said output means is arranged to generate in succession a pre-pulse which drives one pixel of its associated display to one of its extreme optical states, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

65. (New) A controller according to claim 21 wherein said output means is arranged to generate in succession a pre-pulse which drives one pixel of its associated display to one of its extreme optical states, a second pre-pulse which drives said one pixel from said one extreme optical state to the opposed extreme optical state, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

66. (New) A bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, and a controller according to claim 21 arranged to control the electro-optic display.

67. (New) A controller according to claim 22 wherein said output means is arranged to generate in succession a pre-pulse which drives one pixel of its associated display to one of its extreme optical states, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

68. (New) A controller according to claim 22 wherein said output means is arranged to generate in succession a pre-pulse which drives one pixel of its associated display to one of its extreme optical states, a second pre-pulse which drives said one pixel from said one extreme optical state to the opposed extreme optical state, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

69. (New) A bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, and a controller according to claim 22 arranged to control the electro-optic display.

70. (New) A controller according to claim 27 wherein said output means is arranged to generate in succession a pre-pulse which drives one pixel of its associated display to one of its extreme optical states, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

71. (New) A controller according to claim 27 wherein said output means is arranged to generate in succession a pre-pulse which drives one pixel of its associated display to one of its extreme optical states, a second pre-pulse which drives said one pixel from said one extreme optical state to the opposed extreme optical state, and an addressing pulse which drives said one pixel from said one extreme optical state to the desired final state.

72. (New) A bistable electro-optic display having a plurality of pixels, each of which is capable of displaying at least three gray levels, and a controller according to claim 27 arranged to control the electro-optic display.